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ABSTRACT

The development of a model for criterion-referenced mastery reading comprehension tests for university courses in English as a Second Language (ESL) is designed. In the process of developing this model, two major issues were addressed: clarification of the concept of "criteria" within criterion-referenced testing and choice of the appropriate model of the reading process. Criteria were defined as achievement of specific tasks related to academic reading needs in English. The reading model chosen was based on schema theory. Using pre- and post-course data from a sample of 68 Israeli university freshmen enrolled in academic ESL reading comprehension courses, information was gathered about learners' needs, reading tasks, course content, and texts used. Six tasks were hypothesized and appraised by 27 raters as representing mastery reading comprehension. Statistical analysis of student performance on the tasks confirmed the hypothesized relationship between learner needs, reading tasks, and course content and their cumulative contribution to formulation of criteria for a test of this type. It is concluded that the objectives of a mastery reading comprehension test are: (1) recognizing a text's rhetorical mode; (2) identifying main ideas; (3) identifying supporting ideas; (4) discovering author intent; (5) understanding author conclusions; and (6) making evaluations. (MSE)

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FROM NEEDS ANALYSIS TO CRITERION-REFERENCED TESTING

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The aim of the present study was to develop a model for criterion-referenced mastery reading comprehension tests for university EFL courses.The development of such a model involves the need to deal with two major issues:the clarification of the concept of " criteria" within criterion-referenced testing and the choice of the appropriate model of the reading process.

A number of eminent scholars in the field of testing refer to both advantages and weaknesses of criterion-referenced testing.The advantages range from its positive washback effect on instruction (Hughes,1986)to its usefulness in program evaluation(Bachman,1988). The main weakness of criterion -referenced testing is that its construction and application do not provide a satisfactory answer to a number of questions such as whether numeric criteria can be translated into real-life performance(Douglas,1988;Skehan,1984) or if criterion-referencing is an attainable goal of testing altogether(Skehan,1984).The most intriguing issue,however,on which there is no unanimous agreement yet,is the definition of the concept of" criteria" within criterion-referenced testing.

In the interpretation adopted for the present study,criterion-referencing does not mean the setting of a standard which could be expressed in final grades and to which the test-taker's performance has to be referred.This aspect,however,may be considered at a later stage of the implementation of the model according to the standards set by specific reading courses.

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In this study,the concept of criteria within criterion-referenced testing of reading comprehension is meant to imply that the test is used "to ascertain an individual reader's status with respect to a well-defined behavioural domain"(Popham,1978;Hudson & Lynch,1984;Skehan,1989).
Accordingly,the development of a model for a mastery reading comprehension test requires the identification of the "behavioural domain" of reading as specified in the authentic tasks the reader has to perform.The domain of reading comprehension is determined by the readers' needs in academic reading in EFL.These tasks will have to be translated into the objectives of the mastery reading comprehension test.
The achievement of these criteria is linked to a number of narrower teaching objectives as specified in the various units of the course of instruction.

The second major issue involved in the construction of a criterion-referenced mastery reading comprehension test is the choice of the model that best represents text processing within the domain of EFL reading comprehension.Recent theories of reading see reading as an interactive process, a kind of dialogue between the reader and the text, in the course of which the reader's knowledge is activated and checked against the textual information. (Rosenblatt,1978; Widdowson,1979;Carrell & Eistenhold,1983).Interactive models of reading assume that "skills at all levels are interactively available to process and interpret the text"(Grabe,1988;).Efficient text-processing is interactive in the sense that it is both text-based and Knowledge-based(Carrell,1988).Text-based ("bottom-up") processing involves the skill of decoding of individual meaning-bearing patterns, the building of textual meaning from the smallest units to the largest ones.Knowledge-based("top-down") processing is the formulation of predictions about the text which are based on the reader's prior (background)knowledge and, consequently,the confirmation or refutation of these predictions which is based on the text.

Well organized background knowledge has a facilitative effect:the reader has a set of expectations,a schema,for integrating this knowledge with text information.It should be noted,however,that while for a fluent L1 reader, perception and decoding is in most cases an automatic,unconscious and intuitive cognitive process,for a good FL reader, it is the fruit of proper training and extensive experience.FL readers'inadequate language proficiency(referred to as "language ceiling" or "threshold")results a set of constraints which may cause overuse of a single skill and may prevent the interaction of text-based and knowledge-based processing.(Cziko,1978;Clarke,1979;Eskey,1973,1986;Ulijn,1980; Alderson,1984;Carrell,1988).

In terms of the schema-theoretic view of basic processes in reading comprehension,it is assumed that the ultimate goal of attaining mastery in the behavioural domain of reading can be achieved by training the reader in "linguistic schemata"(the enabling skills of decoding and discourse-processing) as well as activating the reader's "content schemata"(his prior knowledge of the content area) and "formal schemata"(the reader's understanding of the rhetorical structure of the text)(Carrell,1988).The good FL reader will presumably be flexible in the utilization of these three types of schemata,i.e. in the interactive process of text comprehension each type of schemata will serve as a "compensatory source of information" (Stanovich,1980).

Whether the schemata will eventually lead to successful text comprehension presumably also depends on the individual reader's awareness of his own cognitive processing of the text,the reader's metacognition.This includes not only the reader's knowledge about his cognition but also his ability to regulate this cognition(Baker & Brown,1987).In terms of reading comprehension,successful comprehension

monitoring depends on the selection and application of appropriate metacognitive skills,i.e. the deployment of reading strategies.Differently from the enabling skills , which can be taught in the course of instruction, and the metacognitive skills , which can be aroused in the process of training, reading strategies have to be developed by the readers themselves as part of the self-regulatory mechanism employed by them during the processing of the text.

The test model presented in this study was developed on the basis of the above stated interpretation of criterion-referencing as well as on the identification of the domain of reading comprehension in the field of academic reading in EFL.

The view held by practising teachers is that a test of reading comprehension is a direct reflection of the course of instruction.In the choice of test items,the readers'needs and the reading tasks are not considered.The approach adopted in the present study advocates the view that the development of a reading comprehension test should be based on the analysis of all the three aspects:the learners' needs,the specification of reading tasks and the description of the course of instruction.

The tentative model researched in the study is therefore four-dimensional.It was hypothesized that the logical chain of the interrelated dimensions of learners' needs,reading tasks and course content is complemented by a fourth dimension,the domain specification of the mastery reading comprehension test(See Fig.1).We further hypothesize that the three dimensions are both cumulatively and directly contributing to the ultimate objectives of a mastery reading comprehension test.

- Insert Figure 1 about here-

The following research questions were asked at the outset of the study:

1. What is the relationship between learners' needs, reading tasks and course content in the identification of valid objectives of a mastery reading comprehension test?
2. What is the contribution of the enabling reading skills to mastery reading comprehension in the interactive process of reading?
3. What is the relationship between the enabling reading skills and mastery reading comprehension, on the one hand, and the readers' metacognitive skills, on the other?

PROCEDURE

The subjects of the study were 68 first year university students in Israel, enrolled in EFL reading comprehension courses. The students were majors of different social-science departments serviced by EFL courses. The aim of the EFL reading courses was to train students in the reading skills needed for their academic reading in English.

Information about learners' needs, reading tasks and course content was gathered from the following sources:

1. Questionnaires handed out to
   a) teachers of EFL reading courses at various universities in Israel;
   b) university departments serviced by EFL courses;
   c) students enlisted in EFL courses;
   d) students who studied in EFL courses in previous years.
2. A pre- and a post-test on mastery reading comprehension administered respectively at the beginning of the year and seven months later.
3. Progress tests measuring the performance of the 68 first year students in the use of the enabling reading skills taught in EFL courses.

4.Students' immediate retrospection and self-observation reports on all the tests.

The questionnaires addressed to the four groups of informants concentrated on the same issues,namely

a)students' needs in their academic reading,i.e. text-types and level of text difficulty;

b)reading tasks,i.e. authentic tasks required of students in the field of academic reading in English;

c)course-content,i.e. the input of skills that would facilitate students' academic reading in English.

On the assumption that groups of informants would relate to the issues from their specific point of view,the questions on the respective questionnaires ,although referring to the same issues,were formulated differently.Thus,regarding the type of text,English teachers were asked about the texts their students are required to read in the EFL courses;departments serviced by EFL courses were asked about texts in English included in their bibliography lists.New students were asked about their expectations with regard to their needs in academic reading in English;and ex-students-about the specific texts they had to read in the course of their studies in the respective departments.The pre- and post-test administered respectively at the beginning of the year and seven months later were structured according to the specification of the domain of mastery reading comprehension,as derived from the analysis of the preliminary questionnaires.(See Table of Specification 1)

Six authentic tasks were hypothesized as representing mastery reading comprehension and specified as objectives of the pre- and post-test:

a)the rhetorical mode(genre) of the text has to be recognized;

b)the main ideas of the text have to be understood;

c)supporting ideas have to be located;

d)the development of ideas within the text has to be discovered;
e)the author's intention has to be recognized;
f)conclusions have to be noted and the author's position has to be evaluated.

-Insert Table of Specification 1 about here-

The tests were controlled in terms of subject matter,level of difficulty and length of text.In order to validate the pre- and post-tests, 27 independent raters were asked to appraise on the scale of 1 to 4 to what extent the tests reflected the reading tasks.

In the course of instruction,progress tests on the enabling skills were administered at regular intervals.The Table of Specification presented here is a condensed combination of all the progress test specifications.(See Table of Specification 2)

-Insert Table of Specification 2 about here-

Information about the students' cognitive processing of the text as reflected in their metacognitive skills was gathered from their immediate retrospection and self-observation reports.The students were asked to justify their answers to the test questions with reference to the text and to report on their individual reading strategies.This information was analyzed in view of the hypothesized relationship between the enabling skills taught in the course of instruction and the tasks on the mastery reading comprehension test.

DATA ANALYSIS

A)Information obtained from the questionnaire was categorized by ten independent judges.They were experienced EFL teachers involved in the

teaching of reading comprehension and material development.The final categories were derived from the categorization on which there was a majority agreement.The three groups of categories(tasks,needs and course content)were submitted to an Internal Consistency Analysis,Duncan's Multiple Range Test and a Multiple Regression Analysis.

B)The validation rating of the pre- and post test carried out by independent raters was submitted to correlational analysis.

C)Students' immediate retrospection reports were evaluated by independent judges to assess the application of the readers' enabling skills to overall reading comprehension tasks.

D)Correlational analysis was carried out on test scores and the acceptability of students' immediate retrospection reports.

RESULTS AND DISCUSSION

Regarding the content of the above mentioned interrelated constituents of the four-dimensional model,the following findings can be reported.

Information about learners' needs for their academic reading in English centred around two main aspects:type of text and level of text difficulty.

Information on type of text was categorized into 10 groups which were subsequently condensed into the following 5:

1)articles from professional journals;2)reports and reviews;3)descriptions of empirical research;4)essays and pamphlets; 5)textbooks and handbooks.The informants referred to the following criteria of text difficulty: subject-matter and cultural reference;various aspects of vocabulary(terminology,number of unknown words);syntactic complexity;implications requiring complex inferencing.

Information on the tasks students would have to perform in EFL reading

was categorized into 10 tasks:1)understanding the main idea/s;2)distinguishing between main idea/s and supporting ideas; 3)discovering the author's intention;4)fast,fluent reading;5)recognizing text-organization; 6)critical reading(evaluation);7)transcoding information;8)summarizing text content;9)enrichment of vocabulary;10)identification of text genre. As to the course content,informants named the skills that would enable readers to cope with the above stated tasks.11 different categories were derived from this information and grouped into the following types of skills:

a)decoding skills(morphological and syntactic clues,lexical clues,reference and substitution markers);

b)discourse processing skills (identification of relationships of comparison/contrast;cause/effect;fact/opinion;general statements/illustration);

c)global reading skills(prediction;skimming;scanning;summarizing).

In view of the schema-theoretic approach to the domain of reading comprehension adopted in this study,there is obvious need to also activate the students' content schemata as well as to teach formal schemata(various types of text organization).This aspect was added to the course of instruction.

Regarding the opinions of the different groups of informants about the specific components of each dimension of the model,Duncan analysis showed that there was no total agreement among them.Thus,while most of the informants agreed upon the learners' needs in English reading comprehension,each group emphasized different tasks as most important to the reader.

All the categorized information was submitted to Regression Analysis in order to find out to what extent the groups of information

predicted one another.The results show that course content was significantly predicted by both tasks (R2=73%) and needs (R2=44%) and both merged in the prediction of course content(R2=75%).This substantiates our position that the course of instruction should be built in accordance with the authentic reading tasks which,in turn,should correspond to the learners' needs.

The content validity of the mastery reading comprehension test,i.e.the extent to which it appropriately reflects the reading tasks,was assessed by 27 independent judges.They were asked to rate on the scale of 1 to 4 how the reading tasks were reflected on the pre- and post-test.The total of the rating yielded a correlation of r=.39 between the reading tasks and the test questions.

Regarding the relationship between the enabling reading skills and the skills tested on the pre- and post-tests,it should be noted that only the scores on such global enabling skills as prediction,skimming and summarizing correlated significantly with the scores on the mastery reading comprehension test;the correlations ranged from .34 to .41.

However,students' immediate retrospection reports indicate that in answering the questions on the mastery reading comprehension test,students utilized the enabling skills to a considerable extent.For example,having to distinguish between the main and the supporting ideas,they made extensive use of examplification clues;or having to identify the author's intention,they searched for lexical clues.When asked to identify the rhetorical mode of the text(which was argumentative),students referred to the markers of cause and effect;when the test items referred to conclusions and evaluation,the readers reported using the skill of skimming and summarizing.Self-observation reports reflected also the utilization of the readers' general background knowledge in the attempt to answer the questions on the mastery reading comprehension test.It may be suggested that in reaching the ultimate goal of text comprehension, linguistic as well

as content and formal schemata cumulatively contribute to overall text comprehension,and thus need not be separately tested on the mastery reading comprehension test.

In order to answer the question about the relationship between the enabling skills and overall text comprehension,on the one hand,and the readers' metacognitive skills,on the other,students' immediate retrospection and self-observation reports were coded as "acceptable" or "unacceptable" in relation to the text and submitted to correlational analysis with test-scores.The correlations ranged between .41 and .81.The correlations also suggested that at the end of the course students were in much better control of their cognitive skills(pre-test':.26;post-test:.44).This implies that the input of the enabling reading skills stimulated the readers's awareness of cognitive text-processing which,in turn,contributed to the development of more efficient reading strategies.

CONCLUSIONS

In view of the research questions stated above,the following conclusions can be drawn.

1.The research confirms the hypothesized relationship between learners' needs,reading tasks and course content and their cumulative contribution to the formulation of the criteria(domain specifications) of a mastery reading comprehension test.

Accordingly,the objectives of a mastery reading comprehension test are:

a)recognizing the rhetorical mode of the text;
b)identifying the main idea(ideas) of the text;
c)identifying the supporting ideas of the text;
d)discovering the author' intention(purpose);
e)understanding the author's conclusions
f)making evaluations.

The content in which these objectives are tested is as follows:articles from professional journals;reports and reviews;descriptions of empirical research;essays and pamphlets;textbooks and handbooks.(See Table of Specification 1).

2.In the interactive process of reading,enabling reading skills are subsumed within the scope of the skills required for overall (mastery) reading comprehension and ,thus,need not be specified in the objectives (domain specification) of the mastery reading comprehension test.

3.Students' immediate retrospection and self-observation reports indicate that the enabling skills are duly enacted by the readers' text processing strategies and employed for the purpose of overall reading comprehension.

In view of these findings,the model suggested above(see Fig.1)can now be presented in its full version as seen in Figure 2.

-Insert Figure 2 about here-

It is obvious,however,that extensive empirical research and large-scale testing of reading comprehension are necessary to provide further evidence for the hypothesized cumulative relationship between the enabling reading skills and overall reading comprehension, as proposed in the present study.

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T A B L E 1

TABLE OF SPECIFICATION OF A MASTERY READING COMPREHENSION TEST

\ TASKS / CONTENT \	Rhetorical Mode	Author's Intention	Main Idea/ Supporting Idea(s)	Conclu-sions	Evaluati
Studies & articles from journals					
Reports & Reviews					
Description of empirical research					
Essays & Pamphlets					
Handbooks & Textbooks					

T A B L E 2

TABLE OF SPECIFICATION OF

PROGRESS TESTS

OBJECTIVES / CONTENT	DECODING SKILLS			DISCOURSE PROCESSING SKILLS				GLOBAL READING SKILLS			
	Gram. comp.	Lex. comp.	Cohes. comp.	Comp. cont.	Cause eff.	Fact opin.	Gen. st-s ill.	Pred.	Skim.	Scan.	Su-
Stud.& art. from journ.											
Report. reviews											
Descr. of emp. resear.											
Essays& pamphl.											
Hand- books& text- books											

The four-dimensional model.

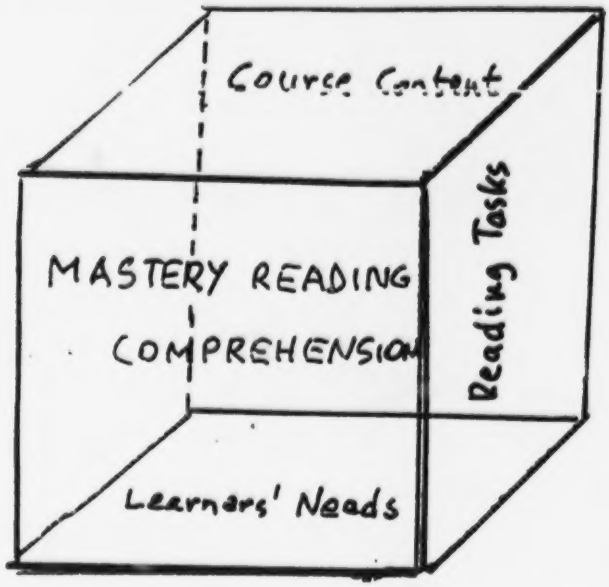
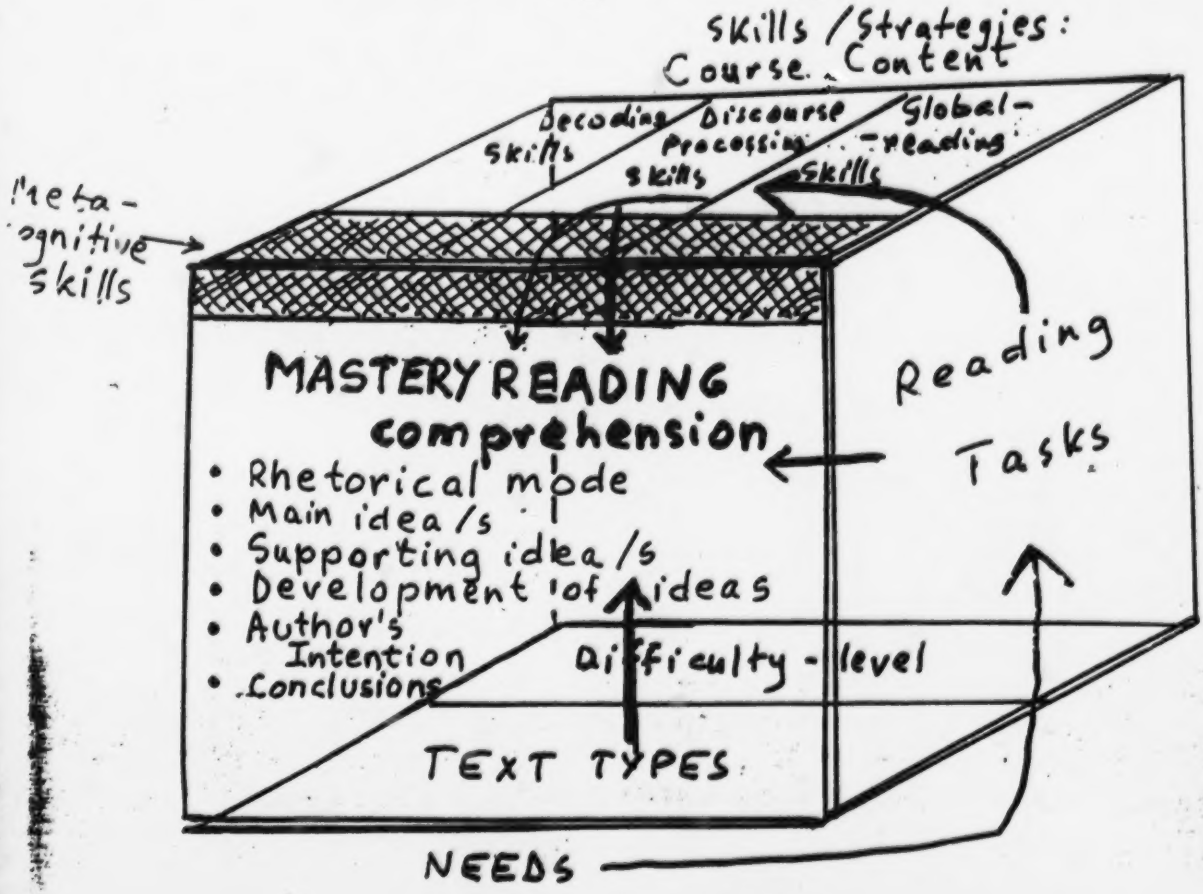


Fig. 1.

The complete four-dimensional model of a mastery reading comprehension test.



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